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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of	Group Art Unit: 2615
MOTOKI KATO	Examiner: ANAND RAO
Appln. No. 08/634,122	APPELLANT'S REPLY BRIEF
Filed: April 19, 1996	
For: APPARATUS FOR ENCODING AND DECODING HEADER DATA IN PICTURE SIGNAL TRANSMISSION	2001 Ferry Building San Francisco, CA 94111 (415) 433-4150

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

This is in reply to the Examiner's Answer mailed February 4, 2000.

Argument

I. The Examiner Erroneously Maintains the Obviousness Rejections of the Pending Claims

In the Examiner's Answer, the Examiner states that Morrison discloses storing picture header sequences in the write control unit, and further discloses that a decision process executed in said control unit is operative upon picture header sequences to omit certain overheads when they contain redundant information. See Examiner's Answer (Paper 33), Page 6, lines 6-8. The Examiner also states that this decision process corresponds to the comparing operation in the claimed invention of the present application. See Examiner's Answer (Paper 33), Page 6, line 9. The Examiner then asserts that if the decision process of Morrison is shown to be executed on multiple picture headers, that such a step would read on the claims of the present application. See Examiner's Answer (Paper 33), Page 6, lines 9-10.

For the reasons set forth in the Appellant's Appeal Brief all of which are incorporated herein and specifically renewed, as well as for the reasons set forth below, Appellant respectfully submits that the disclosure of Morrison (when considered in combination with Raychaudhuri reference) does not render obvious the claimed invention set forth in claims 1 and 2 of the present invention.

The portion of Morrison to which the examiner relies upon explains that at the start of each group of picture blocks, the write control unit 27, receives a group-of-blocks header sequence, and at the start of each picture the write control unit 27 receives a picture header sequence. See Morrison, Column 5, lines 1-5. Morrison then explains how the write control unit stores these blocks of data while the precoder calculates the blocks overheads which it stores. See Morrison, Column 5 lines 5-10. The write control unit in Morrison then receives a second block of picture data and with data from the precoder and the group-of-blocks and picture header sequences, determines which of the picture or group overheads is to be transmitted and subsequently writes them to the FIFO 22 along with their associated word identity codes. See Morrison, Column 5 lines 10-18.

In other words, the device in Morrison has header sequence data at the beginning or start of each group of blocks. See Morrison, Column 5, lines 1-3. This beginning header sequence data is associated with the entire sequence of picture blocks and does not change from picture block to picture block within each picture sequence. Instead, the controller unit takes data received from the precoder and the group-of-blocks and picture header sequences, and determines which of the overhead sequences are to be transmitted. This is the redundant information, as referred to by the examiner, that is omitted by the decision process executed in the control unit. See Examiner's Answer (Paper 33), Page 6, lines 5-7.

Moreover, the fourth of the four possible combinations of transmitted data in Morrison to which the Examiner refers, where there is coefficient data

and no overheads, occurs when the picture or group header contains sufficient information to characterize the block in question. See Morrison, Column 5 lines 42-45. The control unit is simply looking at the group header to characterize the entire block and then storing that information. Indeed, unlike the present invention, each picture in the block is not being compared in Morrison, and contrary to the Examiner's assertions, decision process does not correspond to the comparing operation in the claimed invention of the present application.

II. Morrison Teaches Away From Comparing Picture Headers Across Picture Boundaries

The Examiner argues that the encoder will not send any picture level header data containing redundant overheads, so that every new picture header received has only new overhead information that the decoder does not already have on hand. See Examiner's Answer (Paper 33), Page 8, lines 4-8. The Examiner highlights an example where a picture header sequence for a corresponding group of pictures is presented to an encoder. Citing Morrison, the Examiner states that in processing the picture header sequence, a current picture header and its overheads containing coding parameters is compared with a preceding picture header and its overheads containing coding parameters and if redundant, the overheads of the current picture header are omitted as part of the encoding process. See Examiner's Answer (Paper 33), Page 8, lines 8-13. The Examiner then states that assuming the above case, the preceding picture header containing the overheads pertaining to coding parameters along with the preceding picture and the current picture are transmitted. See Examiner's Answer (Paper 33), Page 8, lines 14-17.

As previously asserted, the decoder of Morrison stops reading data from the buffer 47 for the current picture upon detection of a new picture start code, thus, suggesting that each picture is treated as a separate unit, and teaching away from comparing picture headers across picture boundaries.

Moreover, as explained above, the control unit in Morrison receives and stores a group-of-blocks header sequence and a picture header sequence at the start of each group of blocks. See Morrison, Column 5, lines 1-10. Then, at the beginning of the next block, the control unit receives the data from the precoder and then decides according to instructions with the data received from the precoder and the group-of-blocks and picture header sequences, which of the overheads are to be transmitted. See Morrison, Column 5, lines 11-16. This process necessarily teaches away from comparison of picture headers across picture boundaries because the control unit in Morrison is only looking to the header at the start of each group of blocks or picture sequence.

The Examiner next states, citing Morrison, that the transmitted preceding picture and its associated picture header containing overheads pertaining to coding parameters pertaining to the preceding picture and the current picture are identified by the decoder by the start code of the received preceding picture header, and the associated overheads containing coding parameters are decoded and used to decode the preceding picture. See Examiner's Answer (Paper 33), Page 8, lines 16-20.

The portion of Morrison to which the examiner refers to support the Examiner's assertions above, contrary to the Examiner's position, also teaches away from comparing picture headers across a picture boundary. In particular, Morrison discloses that the sync detector continuously scans the received data stream for a picture start code indicating the start of data for a new picture. If the code is incorrect, an error flag is set. The combination of the PSC error flag and the line error flag is passed to a clock generator unit. See Morrison, Column 7, lines 61-68. This detection of the picture start code, which consists of header sequence information, likewise suggests that the sync detector is not scanning across the picture boundaries, therefore, there can be no comparison of picture header data across picture header boundaries.

Moreover, the decoding to which the Examiner refers is done by a word identity decoder which ascertains from the word identities read from the buffer whether the associated data word is coefficient data or overheads, and controls a demultiplexer to direct it, and the associated word identity to the appropriate FIFO store. See Morrison, Column 9, lines 5-10. However, these word identities of the data contents are checked as they are read and, once a picture start code is detected, further reads from the buffer unit are inhibited until the next picture signal or group of blocks signal. See Morrison, Column 8, lines 62-66. The data from which the word identity is ascertained is read by the demultiplexer from the buffer unit at the start of a picture or group of blocks sync signal from the clock generator unit. See Morrison, Column 8, lines 60-63. Again this suggests that each picture is being treated as a separate unit by contrast to the claimed invention.

Therefore, the detection of the error in the start codes and the repeating operation to which that the examiner additionally notes are not consistent with picture header reductions across picture boundaries as claimed in the present invention.

III. The Prior Art Teaches Away From Decoding Succeeding A Picture Based Upon Control Information Associated With A First Picture

The Examiner states that the encoder in Morrison will not send any picture level header data containing redundant overheads, so every new picture header received has only new overhead information that the decoder does not already have on hand. See Examiner's Answer (Paper 33), Page 10, lines 8-11. Assuming, arguendo, that the above proposition is true, the example cited by the Examiner in reference to Morrison where for a picture header sequence for a corresponding group of pictures is presented to the encoder, would teach away from decoding a succeeding picture based upon control information associated with a first picture.

In particular, the Examiner asserts that the device in Morrison in processing the picture header sequence, a current picture header and its overheads containing coding parameters is compared with a preceding picture header and its overheads containing coding parameters, and if redundant, the overheads of the current picture header are omitted as a part of the encoding process. See Examiner's Answer (Paper 33), Page 10, lines 13-16.

However, the encoding process in Morrison to which the Examiner cites is taking place between the leading or beginning header sequences associated with each group of picture blocks, (see Morrison, Column 5, lines 1-4 and 11-20), not between successive pictures as required in the claimed invention of the present application. Indeed, as understood, Morrison teaches away from the limitation of decoding successive picture based upon control information from preceding pictures.

Moreover, the Examiner states that assuming the encoding process in Morrison above, the preceding picture header containing the overheads pertaining coding parameters along with the preceding picture and the current picture are transmitted. See Examiner's Answer (Paper 33), Page 10, lines 16-18. Also, the Examiner states that the transmitted preceding picture and its associated picture header containing overheads pertaining to coding parameters pertaining to the preceding picture and the current picture are identified by the decoder by the start code of the received preceding picture header, and the associated overheads containing coding parameter are decoded and used to decode that preceding picture. See Examiner's Answer (Paper 33), Page 10 lines 19-20 and Page 11, lines 1-4.

However, the portion of Morrison to which the Examiner refers does not suggest or teach decoding across picture boundaries. The cited language describes how to enable continuous transmission at a fixed data rate. See Morrison, Column 7, lines 1-25. Furthermore, while the Examiner cites language in Morrison which refers to how the sync detector continuously scans the received data stream for a picture start code indicating the start of

data for a new picture, see Morrison, column 7, lines 1-25, as understood, none of the cited portions in Morrison teaches the limitation of decoding a succeeding encoded picture signal by using stored data from a previous picture header when the successive header data of the picture lacks control data as claimed in claim 3, 5-7, and 10-14 of the present invention.

Referring to the encoding side of the device in Morrison, the Examiner states that the current picture and the current picture header with its omitted overheads is transmitted to the decoder, and when detected by the start code, the decoder knows the overheads associated with the preceding picture can be used to decode the current picture. See Examiner's Answer (Paper 33), Page 11, lines 4-7. However, Morrison describes how the demultiplexer reads data from the buffer unit at the start of a picture or a group of blocks' sinc signal from the clock generator unit. See Morrison, Column 8, lines 60-63. The word identity of the data contents is checked as they are read and, once a picture start code is detected, further reads form the buffer unit are inhibited until the next picture signal or group of blocks signal. See Morrison, Column 8, lines 63-68. This picture start code detection does not teach or suggest decoding picture header data of a succeeding encoded picture signal by using control data stored in memory on the next header data when that header data does not contain control information as claimed in the current invention.

Therefore, the resetting operation referred to in the appellant's brief (see Paper 32, Page 12, lines 11-17) does not provide, as the Examiner states, the decoder with access to overheads from the preceding picture that can be used to decode the current picture. See Examiner's Answer (Paper 33), Page 11, lines 11-16. Instead, in Morrison the memory is programmed so that, following a resetting to the base address by a picture start code, it produces a sequence of word identity codes corresponding to the transmission sequence which is transmitted at a fixed rate which is done by incorporating a feedback to the coder to adjust the rate of generation of data. See Morrison, Column

7, lines 1-5 and Column 8, lines 10-14. Consequently, picture header data is not decoded by using header data information from a previous picture header data as claimed in the current invention. Instead the entire aforementioned transmission sequence is just changed based on the variations within. See Morrison, Column 8, lines 14-19.

Moreover, the repeating operation to which the Examiner cites (see Examiner's Answer (Paper 33), Page 9, lines 17-20), is simply checking for a minimum number of picture start codes in order for the demultiplexer to continue reading picture sync signals. See Morrison, Column 9, lines 22-31. The repeating operation is not teaching or suggesting that stored control data from a previous picture is being use to decode a succeeding encoded picture signal as required in the claimed invention of the present application.

IV. It Would Not Be Obvious To One of Ordinary Skill In The Art To Modify Morrison To Reduce Information Between Picture Headers.

The Examiner in his answer duly notes that a picture code is always transmitted with each encoded picture and is necessary for synchronization of the decoding process. See Examiner's Answer (Paper 33), Page 12, lines 8-10. However, the Examiner states that according to Morrison's description, header hierarchy the picture header does not have to include a start code because the reference discloses that the picture header *may include some or all of the following:* start code, buffer state, picture number, picture type. See Examiner's Answer (Paper 33), Page 12, lines 10-12. Therefore, the Examiner states, that based on the fact that Morrison discloses that a picture start code does not always have to be included in a picture header, one of ordinary skill in the art would be motivated to make the coding process more efficient by eliminating a picture header containing more that picture start code, and transmit the start code outside picture header. See Examiner's Answer (Paper 33), Page 12, lines 17-20 and Page 13, line 1.

Nevertheless, the distinction between Morrison and the claimed invention is that regardless of the type of information that is in the header, Morrison does not provide motivation to reduce header information by comparing successive header control data and using the previous control header data on successive picture headers when the picture headers are matched, as claimed in the present invention. Morrison teaches modifying an entire transmission sequence upon on a resetting of the memory based on the picture start code. See Morrison, Column 8, lines 10-19. Therefore there is no motivation to modify Morrison in order to reduce picture header data by comparing picture headers.

V. The Examiner Erroneously Concludes That Appellant's Claimed Inventions Set Forth In Claims 8 And 9 Are Obvious

First, the Examiner states that "in response to Appellant's arguments against the Raychaudhuri individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references." See Examiner's Answer (Paper 33), Page 13.

Appellant agrees with the Examiner that one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references.

However, Appellant is uncertain as to the Examiner's statement "in response to Appellant's arguments against the Raychaudhuri individually" since Appellant's Appeal Brief, as pertains to claims 8 and 9, acknowledged the Examiner's rejection of claims 8 and 9 based on a combination of Morrison and Raychaudhuri, and to that extent, explained that the Examiner has failed to establish a prima facie case of obviousness for the claimed invention set forth in claims 8 and 9 which require a picture encoding method that compares the control data of a first picture with control data of a second picture.

To consider a combination of references, one must consider each individual reference first to determine the scope and nature of its teaching. Moreover, the deficiencies of one reference cannot be overcome simply by having its disclosure combined with another which still suffers from the same lack of teaching a particular claimed aspect of an invention.

In having thoroughly discussed the teaching of Morrison (disclosure of which the Examiner exclusively focuses on in the Examiner's Answer) and clearly pointed out Appellant's understanding of the Morrison reference, Appellant concluded that the Examiner's obviousness rejection of claims 8 and 9 are in error.

Indeed, as understood, Raychaudhuri does not overcome the deficiencies of Morrison set forth above. Therefore, Appellant maintains that the Examiner erroneously rejected claims 8 and 9 as obvious over Morrison in view of Raychaudhuri.

VI. Conclusion

For the reasons set forth above as well for the reasons set forth in Appellant's Appeal Brief, Appellant respectfully submits that claims 1-3, 5-10 and 12-14 are allowable over the cited references of record. Accordingly, Appellant respectfully requests the Board of Appeals to reverse the Examiner's rejections.

Respectfully submitted,
LIMBACH & LIMBACH L.L.P.

Dated: 4/4/08 By: _____
Seong-Kun Oh
Recognition under 37 CFR §10.9(b)

Attorneys for Appellant

Atty Docket No. SONY-C4021

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